

RESULT 1
 US-09-523-656-37
 ; Sequence 37, Application US/09523656
 ; Patent No. 6458563
 ; GENERAL INFORMATION:
 ; APPLICANT: Lollar S., John
 ; TITLE OF INVENTION: MODIFIED FACTOR VIII
 ; FILE REFERENCE: 75-95I
 ; CURRENT APPLICATION NUMBER: US/09/523,656
 ; CURRENT FILING DATE: 2000-03-10
 ; EARLIER APPLICATION NUMBER: 09/037,601
 ; EARLIER FILING DATE: 1998-03-10
 ; EARLIER APPLICATION NUMBER: 08/670,707
 ; EARLIER FILING DATE: 1996-06-26
 ; NUMBER OF SEQ ID NOS: 38
 ; SOFTWARE: PatentIn Ver. 2.0
 ; SEQ ID NO 37
 ; LENGTH: 4404
 ; TYPE: DNA
 ; ORGANISM: Porcine
 ; FEATURE:
 ; NAME/KEY: CDS
 ; LOCATION: (1)..(4401)
 US-09-523-656-37

Query Match 90.0%; Score 3962.6; DB 3; Length 4404;
 Best Local Similarity 93.8%; Pred. No. 0;
 Matches 4127; Conservative 0; Mismatches 274; Indels 0; Gaps 0;

Qy	1	ATGCAGCTAGAGCTCTCCACCTGTGTCTTTCTGTGTCTCTTGCCACTCGGCTTTAGTGCC	60
Db	1	ATGCAGCTAGAGCTCTCCACCTGTGTCTTTCTGTGTCTCTTGCCACTCGGCTTTAGTGCC	60
Qy	61	ATCAGGAGATACTACCTGGGCGCAGTGGAAGTGTCTGGGACTACCGGCAAAGTGAAGTCT	120
Db	61	ATCAGGAGATACTACCTGGGCGCAGTGGAAGTGTCTGGGACTACCGGCAAAGTGAAGTCT	120
Qy	121	CTCCGTGAGCTGCACGTGGACACCAGATTTCTGCTACAGCGCCAGGAGCTCTTCCGTTG	180
Db	121	CTCCGTGAGCTGCACGTGGACACCAGATTTCTGCTACAGCGCCAGGAGCTCTTCCGTTG	180
Qy	181	GGCCCGTCAGTCCTGTACAAAAAGACTGTGTTTCGTAGAGTTCACGGATCAACTTTTCAGC	240
Db	181	GGCCCGTCAGTCCTGTACAAAAAGACTGTGTTTCGTAGAGTTCACGGATCAACTTTTCAGC	240
Qy	241	GTTGCCAGGCCCAGGCCACCATGGATGGGTCTGCTGGGTCTACCATCCAGGCTGAGGTT	300
Db	241	GTTGCCAGGCCCAGGCCACCATGGATGGGTCTGCTGGGTCTACCATCCAGGCTGAGGTT	300
Qy	301	TACGACACGGTGGTCGTTACCCTGAAGAACATGGCTTCTCATCCCCTTAGTCTTCACGCT	360
Db	301	TACGACACGGTGGTCGTTACCCTGAAGAACATGGCTTCTCATCCCCTTAGTCTTCACGCT	360
Qy	361	GTCGGCGTCTCCTTCTGGAAATCTTCCGAAGGCGCTGAATATGAGGATCACACCAGCCAA	420
Db	361	GTCGGCGTCTCCTTCTGGAAATCTTCCGAAGGCGCTGAATATGAGGATCACACCAGCCAA	420

Qy	421	AGGGAGAAGGAAGACGATAAAGTCCTTCCCGGTAAAAGCCAAACCTACGTCTGGCAGGTC	480
Db	421	AGGGAGAAGGAAGACGATAAAGTCCTTCCCGGTAAAAGCCAAACCTACGTCTGGCAGGTC	480
Qy	481	CTGAAAGAAAATGGTCCAACAGCCTCTGACCCACCATGTCTTACCTACTCATACCTGTCT	540
Db	481	CTGAAAGAAAATGGTCCAACAGCCTCTGACCCACCATGTCTTACCTACTCATACCTGTCT	540
Qy	541	CACGTGGACCTGGTGAAAGACCTGAATTCGGGCCTCATTGGAGCCCTGCTGGTTTGTAGA	600
Db	541	CACGTGGACCTGGTGAAAGACCTGAATTCGGGCCTCATTGGAGCCCTGCTGGTTTGTAGA	600
Qy	601	GAAGGGAGTCTGACCAGAGAAAGGACCCAGAACCTGCACGAATTTGTACTACTTTTTGCT	660
Db	601	GAAGGGAGTCTGACCAGAGAAAGGACCCAGAACCTGCACGAATTTGTACTACTTTTTGCT	660
Qy	661	GTCTTTGATGAAGGGAAAAGTTGGCACTCAGCAAGAAATGACTCCTGGACACGGGCCATG	720
Db	661	GTCTTTGATGAAGGGAAAAGTTGGCACTCAGCAAGAAATGACTCCTGGACACGGGCCATG	720
Qy	721	GATCCCGCACCTGCCAGGGCCCAGCCTGCAATGCACACAGTCAATGGCTATGTCAACAGG	780
Db	721	GATCCCGCACCTGCCAGGGCCCAGCCTGCAATGCACACAGTCAATGGCTATGTCAACAGG	780
Qy	781	TCTCTGCCAGGTCTGATCGGATGTCATAAGAAATCAGTCTACTGGCACGTGATTGGAATG	840
Db	781	TCTCTGCCAGGTCTGATCGGATGTCATAAGAAATCAGTCTACTGGCACGTGATTGGAATG	840
Qy	841	GGCACCAGCCCGBAAGTGCACTCCATTTTTCTTGAAGGCCACACGTTTCTCGTGAGGCAC	900
Db	841	GGCACCAGCCCGBAAGTGCACTCCATTTTTCTTGAAGGCCACACGTTTCTCGTGAGGCAC	900
Qy	901	CATCGCCAGGCTTCCTTGGAGATCTCGCCACTAACTTTTCTCACTGCTCAGACATTCCTG	960
Db	901	CATCGCCAGGCTTCCTTGGAGATCTCGCCACTAACTTTTCTCACTGCTCAGACATTCCTG	960
Qy	961	ATGGACCTTGGCCAGTTCTACTGTTTTGTCATATCTCTTCCCACCACCATGGTGGCATG	1020
Db	961	ATGGACCTTGGCCAGTTCTACTGTTTTGTCATATCTCTTCCCACCACCATGGTGGCATG	1020
Qy	1021	GAGGCTCACGTCAGAGTAGAAAGCTGCGCCGAGGAGCCCCAGCTGCGGAGGAAAGCTGAT	1080
Db	1021	GAGGCTCACGTCAGAGTAGAAAGCTGCGCCGAGGAGCCCCAGCTGCGGAGGAAAGCTGAT	1080
Qy	1081	GAAGAGGAAGATTATGATGACAATTTGTACGACTCGGACATGGACGTGGTCCGGCTCGAT	1140
Db	1081	GAAGAGGAAGATTATGATGACAATTTGTACGACTCGGACATGGACGTGGTCCGGCTCGAT	1140
Qy	1141	GGTGACGACGTGTCTCCCTTTATCCAAATCCGCTCAGTTGCCAAGAAGCATCTAAAACT	1200
Db	1141	GGTGACGACGTGTCTCCCTTTATCCAAATCCGCTCAGTTGCCAAGAAGCATCCCAAAACC	1200
Qy	1201	TGGGTACATTACATTGCTGCTGAAGAGGAGGACTGGGACTATGCTCCCTTAGTCCTCGCC	1260
Db	1201	TGGGTGCACTACATCTCTGCAGAGGAGGAGGACTGGGACTACGCCCCCGGGTCCCCAGC	1260
Qy	1261	CCCGATGACAGAAGTTATAAAAGTCAATATTTGAACAATGGCCCTCAGCGGATTGGTAGG	1320

Db	1261	CCCAGTGACAGAAGTTATAAAAAGTCTCTACTTGAACAGTGGTCCCTCAGCGAATTGGTAGG	1320
Qy	1321	AAGTACAAAAAAGTCCGATTATGGCATAACAGATGAAACCTTTAAGACGCGTGAAGCT	1380
Db	1321	AAATACAAAAAAGCTCGATTTCGTCGCTTACACGGATGTAACATTTAAGACTCGTAAAGCT	1380
Qy	1381	ATTCAGCATGAATCAGGAATCTTGGGACCTTTACTTTTATGGGGAAGTTGGAGACACACTG	1440
Db	1381	ATTCCGTATGAATCAGGAATCCTGGGACCTTTACTTTTATGGAGAAGTTGGAGACACACTT	1440
Qy	1441	TTGATTATATTTAAGAATCAAGCAAGCAGACCATATAACATCTACCCCTCACGGAATCACT	1500
Db	1441	TTGATTATATTTAAGAATAAAGCGAGCCGACCATATAACATCTACCCCTCATGGAATCACT	1500
Qy	1501	GATGTC CGTCCTTTGTATTCAAGGAGATTACCAAAAGGTGTAAAACATTTGAAGGATTTT	1560
Db	1501	GATGTCAGCGCTTTGCACCCAGGGAGACTTCTAAAAGGTTGGAAACATTTGAAAGACATG	1560
Qy	1561	CCAATTCTGCCAGGAGAAATATTCAAATATAAAATGGACAGTGACTGTAGAAGATGGGCCA	1620
Db	1561	CCAATTCTGCCAGGAGAGACTTTCAAGTATAAAATGGACAGTGACTGTGGAAGATGGGCCA	1620
Qy	1621	ACTAAATCAGATCCGCGGTGCCTGACCCGCTATTACTCTAGTTTCGTTAATATGGAGAGA	1680
Db	1621	ACCAAGTCCGATCCTCGGTGCCTGACCCGCTACTACTCGAGCTCCATTAATCTAGAGAAA	1680
Qy	1681	GATCTAGCTTCAGGACTCATTGGCCCTCTCCTCATCTGCTACAAAGAATCTGTAGATCAA	1740
Db	1681	GATCTGGCTTCGGGACTCATTGGCCCTCTCCTCATCTGCTACAAAGAATCTGTAGACCAA	1740
Qy	1741	AGAGGAAACCAGATAATGTCAGACAAGAGGAATGTCATCCTGTTTTCTGTATTTGATGAG	1800
Db	1741	AGAGGAAACCAGATGATGTCAGACAAGAGAAACGTCATCCTGTTTTCTGTATTCGATGAG	1800
Qy	1801	AACCGAAGCTGGTACCTCACAGAGAAATATACAACGCTTTCTCCCCAATCCAGCTGGAGTG	1860
Db	1801	AATCAAAGCTGGTACCTCGCAGAGAAATTCAGCGCTTCTCTCCCCAATCCGGATGGATTA	1860
Qy	1861	CAGCTTGAGGATCCAGAGTTCCAAGCCTCCAACATCATGCACAGCATCAATGGCTATGTT	1920
Db	1861	CAGCCCCAGGATCCAGAGTTCCAAGCTTCTAACATCATGCACAGCATCAATGGCTATGTT	1920
Qy	1921	TTTGATAGTTTGCAGTTGTGAGTTTGTGTTGTCATGAGGTGGCATACTGGTACATTCTAAGC	1980
Db	1921	TTTGATAGCTTGCAGCTGTCGGTTTGTGTTGTCACGAGGTGGCATACTGGTACATTCTAAGT	1980
Qy	1981	ATTGGAGCACAGACTGACTTCCTTTCTGTCTTCTTCTCTGGATATACCTTCAAACACAAA	2040
Db	1981	GTTGGAGCACAGACGGACTTCCTCTCCGTCTTCTTCTCTGGCTACACCTTCAAACACAAA	2040
Qy	2041	ATGGTCTATGAAGACACACTCACCCCTATTCCCATTCTCAGGAGAAACTGTCTTCATGTCG	2100
Db	2041	ATGGTCTATGAAGACACACTCACCCCTGTTCCCCTTCTCAGGAGAAACGGTCTTCATGTCA	2100
Qy	2101	ATGGAAAACCCAGGTCTATGGATTCTGGGGTGCCACAACCTCAGACTTTCGGAACAGAGGC	2160

Db	2101	ATGGAAAACCCAGGTCCTCTGGGTCCCTTGGGTGCCACAACCTCAGACTTGCGGAACAGAGGG	2160
Qy	2161	ATGACCGCCTTACTGAAGGTTTCTAGTTGTGACAAGAACACTGGTGATTATTACGAGGAC	2220
Db	2161	ATGACAGCCTTACTGAAGGTGTATAGTTGTGACAGGGACATTGGTGATTATTATGACAAC	2220
Qy	2221	AGTTATGAAGATATTTTCAGCATACTTGCTGAGTAAAAACAATGCCATTGAACCTAGGAGC	2280
Db	2221	ACTTATGAAGATATTCCAGGCTTCTTGCTGAGTGGAAGAATGTCATTGAACCTAGGAGC	2280
Qy	2281	TTTGCCCGAATTCAAGACCCCCTAGTGCGAGCGCTCCAAAGCCTCCGGTCTCGGACGG	2340
Db	2281	TTTGCCCGAATTCAAGACCCCCTAGTGCGAGCGCTCCAAAGCCTCCGGTCTCGGACGG	2340
Qy	2341	CATCAGAGGGACATAAGCCTTCCTACTTTTCAGCCGGAGGAAGACAAAATGGACTATGAT	2400
Db	2341	CATCAGAGGGACATAAGCCTTCCTACTTTTCAGCCGGAGGAAGACAAAATGGACTATGAT	2400
Qy	2401	GATATCTTCTCAACTGAAACGAAGGGAGAAGATTTTGACATTTACGGTGAGGATGAAAAT	2460
Db	2401	GATATCTTCTCAACTGAAACGAAGGGAGAAGATTTTGACATTTACGGTGAGGATGAAAAT	2460
Qy	2461	CAGGACCCTCGCAGCTTTCAGAAGAGAACCCGACACTATTTTCATTGCTGCGGTGGAGCAG	2520
Db	2461	CAGGACCCTCGCAGCTTTCAGAAGAGAACCCGACACTATTTTCATTGCTGCGGTGGAGCAG	2520
Qy	2521	CTCTGGGATTACGGGATGAGCGAATCCCCCGGGCGCTAAGAAAACAGGGCTCAGAACGGA	2580
Db	2521	CTCTGGGATTACGGGATGAGCGAATCCCCCGGGCGCTAAGAAAACAGGGCTCAGAACGGA	2580
Qy	2581	GAGGTGCCTCGGTTCAAGAAGGTGGTCTTCCGGGAATTTGCTGACGGCTCCTTCACGCAG	2640
Db	2581	GAGGTGCCTCGGTTCAAGAAGGTGGTCTTCCGGGAATTTGCTGACGGCTCCTTCACGCAG	2640
Qy	2641	CCGTCGTACCGCGGGGAACTCAACAAACACTTGGGGCTCTTGGGACCCTACATCAGAGCG	2700
Db	2641	CCGTCGTACCGCGGGGAACTCAACAAACACTTGGGGCTCTTGGGACCCTACATCAGAGCG	2700
Qy	2701	GAAGTTGAAGACAACATCATGGTAACTTTCAAAAACCAGGCGTCTCGTCCCTATTCCCTC	2760
Db	2701	GAAGTTGAAGACAACATCATGGTAACTTTCAAAAACCAGGCGTCTCGTCCCTATTCCCTC	2760
Qy	2761	TACTCGAGCCTTATTTCTTATCCGGATGATCAGGAGCAAGGGGCAGAACCTCGACACAAC	2820
Db	2761	TACTCGAGCCTTATTTCTTATCCGGATGATCAGGAGCAAGGGGCAGAACCTCGACACAAC	2820
Qy	2821	TTCGTCCAGCCAAATGAAACCAGAACTTACTTTTGAAAAGTGCAGCATCACATGGCACCC	2880
Db	2821	TTCGTCCAGCCAAATGAAACCAGAACTTACTTTTGAAAAGTGCAGCATCACATGGCACCC	2880
Qy	2881	ACAGAAGACGAGTTTGACTGCAAAGCCTGGGCCTACTTTTCTGATGTTGACCTGGAAAAA	2940
Db	2881	ACAGAAGACGAGTTTGACTGCAAAGCCTGGGCCTACTTTTCTGATGTTGACCTGGAAAAA	2940
Qy	2941	GATGTGCACTCAGGCTTGATCGGCCCCCTTCTGATCTGCCGCGCCAACACCCTGAACGCT	3000
Db	2941	GATGTGCACTCAGGCTTGATCGGCCCCCTTCTGATCTGCCGCGCCAACACCCTGAACGCT	3000

Qy	3001	GCTCACGGTAGACAAGTGACCGTGCAAGAATTTGCTCTGTTTTTCACTATTTTTGATGAG	3060
Db	3001	GCTCACGGTAGACAAGTGACCGTGCAAGAATTTGCTCTGTTTTTCACTATTTTTGATGAG	3060
Qy	3061	ACAAAGAGCTGGTACTTCACTGAAAATGTGGAAAGGAAGTCCGGGGCCCCCTGCCATCTG	3120
Db	3061	ACAAAGAGCTGGTACTTCACTGAAAATGTGGAAAGGAAGTCCGGGGCCCCCTGCCATCTG	3120
Qy	3121	CAGATGGAGGACCCCACTCTGAAAGAAAACATATCGCTTCCATGCAATCAATGGCTATGTG	3180
Db	3121	CAGATGGAGGACCCCACTCTGAAAGAAAACATATCGCTTCCATGCAATCAATGGCTATGTG	3180
Qy	3181	ATGGATACACTCCCTGGCTTAGTAATGGCTCAGAATCAAAGGATCCGATGGTATCTGCTC	3240
Db	3181	ATGGATACACTCCCTGGCTTAGTAATGGCTCAGAATCAAAGGATCCGATGGTATCTGCTC	3240
Qy	3241	AGCATGGGCAGCAATGAAAATATCCATTGATTCAATTTAGCGGACACGTGTTCAAGTGTG	3300
Db	3241	AGCATGGGCAGCAATGAAAATATCCATTGATTCAATTTAGCGGACACGTGTTCAAGTGTG	3300
Qy	3301	CGGAAAAAGGAGGAGTATAAAATGGCCGTGTACAATCTCTATCCGGGTGTCTTTGAGACA	3360
Db	3301	CGGAAAAAGGAGGAGTATAAAATGGCCGTGTACAATCTCTATCCGGGTGTCTTTGAGACA	3360
Qy	3361	GTGGAAATGCTACCGTCCAAAGTTGGAATTTGGCGAATAGAATGCCTGATTGGCGAGCAC	3420
Db	3361	GTGGAAATGCTACCGTCCAAAGTTGGAATTTGGCGAATAGAATGCCTGATTGGCGAGCAC	3420
Qy	3421	CTGCAAGCTGGGATGAGCACGACTTTCCTGGTGTACAGCAAGAAGTGTGAGACTCCCCTG	3480
Db	3421	CTGCAAGCTGGGATGAGCACGACTTTCCTGGTGTACAGCAAGAAGTGTGAGACTCCCCTG	3480
Qy	3481	GGAATGGCTTCTGGACACATTAGAGATTTTCAGATTACAGCTTCAGGACAATATGGACAG	3540
Db	3481	GGAATGGCTTCTGGACACATTAGAGATTTTCAGATTACAGCTTCAGGACAATATGGACAG	3540
Qy	3541	TGGGCCCCAAAGCTGGCCAGACTTCATTATTCCGGATCAATCAATGCCTGGAGCACCAAG	3600
Db	3541	TGGGCCCCAAAGCTGGCCAGACTTCATTATTCCGGATCAATCAATGCCTGGAGCACCAAG	3600
Qy	3601	GAGCCCTTTTCTTGATCAAGGTGGATCTGTTGGCACCAATGATTATTCACGGCATCAAG	3660
Db	3601	GATCCCCACTCCTGGATCAAGGTGGATCTGTTGGCACCAATGATCATTACGGCATCATG	3660
Qy	3661	ACCCAGGGTGCCCGTCAGAAGTTCTCCAGCCTCTACATCTCTCAGTTTATCATCATGTAT	3720
Db	3661	ACCCAGGGTGCCCGTCAGAAGTTTCCAGCCTCTACATCTCCCAGTTTATCATCATGTAC	3720
Qy	3721	AGTCTTGATGGGAAGAAGTGGCAGACTTATCGAGGAAATCCACTGGAACCTTAATGGTC	3780
Db	3721	AGTCTTGACGGGAGGAAGTGGCAGAGTTACCGAGGGAATTCACGGGCACCTTAATGGTC	3780
Qy	3781	TTCTTTGGCAATGTGGATTTCATCTGGGATAAAACACAATATTTTAAACCCTCCAATTATT	3840
Db	3781	TTCTTTGGCAATGTGGACGCATCTGGGATTAAACACAATATTTTAAACCCTCCGATTGTG	3840


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; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/670,707A
; FILING DATE: 26-JUN-1996
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US94/13200
; FILING DATE: 15-NOV-1994
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/212,133
; FILING DATE: 11-MAR-1994
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/864,004
; FILING DATE: 07-APR-1992
; ATTORNEY/AGENT INFORMATION:
; NAME: Greenlee, Lorange L.
; REGISTRATION NUMBER: 27,894
; REFERENCE/DOCKET NUMBER: 75-95F
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 303/499-8080
; TELEFAX: 303/499-8089
; INFORMATION FOR SEQ ID NO: 38:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 4334 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: double
; TOPOLOGY: not relevant
; MOLECULE TYPE: cDNA to mRNA
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; INDIVIDUAL ISOLATE: Factor VIII lacking B domain
; FEATURE:
; NAME/KEY: CDS
; LOCATION: 3..4334
US-08-670-707A-38

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Query Match          86.4%; Score 3802.2; DB 2; Length 4334;
Best Local Similarity 92.0%; Pred. No. 0;
Matches 4051; Conservative 0; Mismatches 278; Indels 72; Gaps 1;

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Qy      1 ATGCAGCTAGAGCTCTCCACCTGTGTCTTTCTGTGTCTCTTGCCACTCGGCTTTAGTGCC 60
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Db      3 ATGCAGCTAGAGCTCTCCACCTGTGTCTTTCTGTGTCTCTTGCCACTCGGCTTTAGTGCC 62

Qy     61 ATCAGGAGATACTACCTGGGCGCAGTGGAAGTGTCTGCTGGGACTACCGGCAAAGTGAAGTC 120
        |||
Db     63 ATCAGGAGATACTACCTGGGCGCAGTGGAAGTGTCTGCTGGGACTACCGGCAAAGTGAAGTC 122

Qy    121 CTCCGTGAGCTGCACGTGGACACCAGATTTCTGCTACAGCGCCAGGAGCTCTTCCGTTG 180
        |||
Db    123 CTCCGTGAGCTGCACGTGGACACCAGATTTCTGCTACAGCGCCAGGAGCTCTTCCGTTG 182

Qy    181 GGCCCGTCAGTCCTGTACAAAAAGACTGTGTTTCGTAGAGTTCACGGATCAACTTTTCAGC 240
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Db	183	GGCCCGTCAGTCCTGTACAAAAAGACTGTGTTTCGTAGAGTTCACGGATCAACTTTTCAGC	242
Qy	241	GTTGCCAGGCCAGGCCACCATGGATGGGTCTGCTGGGTCTTACCATCCAGGCTGAGGTT	300
Db	243	GTTGCCAGGCCAGGCCACCATGGATGGGTCTGCTGGGTCTTACCATCCAGGCTGAGGTT	302
Qy	301	TACGACACGGTGGTCGTTACCCTGAAGAACATGGCTTCTCATCCCGTTAGTCTTCACGCT	360
Db	303	TACGACACGGTGGTCGTTACCCTGAAGAACATGGCTTCTCATCCCGTTAGTCTTCACGCT	362
Qy	361	GTCGGCGTCTCCTTCTGGAAATCTTCCGAAGGCGCTGAATATGAGGATCACACCAGCCAA	420
Db	363	GTCGGCGTCTCCTTCTGGAAATCTTCCGAAGGCGCTGAATATGAGGATCACACCAGCCAA	422
Qy	421	AGGGAGAAGGAAGACGATAAAGTCCTTCCCGGTAAAAGCCAAACCTACGTCTGGCAGGTC	480
Db	423	AGGGAGAAGGAAGACGATAAAGTCCTTCCCGGTAAAAGCCAAACCTACGTCTGGCAGGTC	482
Qy	481	CTGAAAGAAAATGGTCCAACAGCCTCTGACCCACCATGTCTTACCTACTCATACCTGTCT	540
Db	483	CTGAAAGAAAATGGTCCAACAGCCTCTGACCCACCATGTCTTACCTACTCATACCTGTCT	542
Qy	541	CACGTGGACCTGGTGAAAGACCTGAATTCGGGCCTCATTGGAGCCCTGCTGGTTTGTAGA	600
Db	543	CACGTGGACCTGGTGAAAGACCTGAATTCGGGCCTCATTGGAGCCCTGCTGGTTTGTAGA	602
Qy	601	GAAGGGAGTCTGACCAGAGAAAGGACCCAGAACCTGCACGAATTTGTACTACTTTTTGCT	660
Db	603	GAAGGGAGTCTGACCAGAGAAAGGACCCAGAACCTGCACGAATTTGTACTACTTTTTGCT	662
Qy	661	GTCTTTGATGAAGGGAAAAGTTGGCACTCAGCAAGAAATGACTCCTGGACACGGGCCATG	720
Db	663	GTCTTTGATGAAGGGAAAAGTTGGCACTCAGCAAGAAATGACTCCTGGACACGGGCCATG	722
Qy	721	GATCCCGCACCTGCCAGGGCCCAGCCTGCAATGCACACAGTCAATGGCTATGTCAACAGG	780
Db	723	GATCCCGCACCTGCCAGGGCCCAGCCTGCAATGCACACAGTCAATGGCTATGTCAACAGG	782
Qy	781	TCTCTGCCAGGTCTGATCGGATGTCATAAGAAATCAGTCTACTGGCACGTGATTGGAATG	840
Db	783	TCTCTGCCAGGTCTGATCGGATGTCATAAGAAATCAGTCTACTGGCACGTGATTGGAATG	842
Qy	841	GGCACCAGCCCGGAAGTGCACTCCATTTTTCTTGAAGGCCACACGTTTCTCGTGAGGCAC	900
Db	843	GGCACCAGCCCGGAAGTGCACTCCATTTTTCTTGAAGGCCACACGTTTCTCGTGAGGCAC	902
Qy	901	CATCGCCAGGCTTCCTTGGAGATCTCGCCACTAACTTTCTCACTGCTCAGACATTCTG	960
Db	903	CATCGCCAGGCTTCCTTGGAGATCTCGCCACTAACTTTCTCACTGCTCAGACATTCTG	962
Qy	961	ATGGACCTTGGCCAGTTCCTACTGTTTTGTTCATATCTCTTCCCACCACCATGGTGGCATG	1020
Db	963	ATGGACCTTGGCCAGTTCCTACTGTTTTGTTCATATCTCTTCCCACCACCATGGTGGCATG	1022
Qy	1021	GAGGCTCACGTCAGAGTAGAAAGCTGCGCCGAGGAGCCCCAGCTGCGGAGGAAAGCTGAT	1080
Db	1023	GAGGCTCACGTCAGAGTAGAAAGCTGCGCCGAGGAGCCCCAGCTGCGGAGGAAAGCTGAT	1082

Qy	1081	GAAGAGGAAGATTATGATGACAATTTGTACGACTCGGACATGGACGTGGTCCGGCTCGAT	1140
Db	1083	GAAGAGGAAGATTATGATGACAATTTGTACGACTCGGACATGGACGTGGTCCGGCTCGAT	1142
Qy	1141	GGTGACGACGTGTCTCCCTTTATCCAAATCCGCTCAGTTGCCAAGAAGCATCCTAAAACT	1200
Db	1143	GGTGACGACGTGTCTCCCTTTATCCAAATCCGCTCGGTTGCCAAGAAGCATCCCAAAACC	1202
Qy	1201	TGGGTACATTACATTGCTGCTGAAGAGGAGGACTGGGACTATGCTCCCTTAGTCCTCGCC	1260
Db	1203	TGGGTGCACTACATCTCTGCAGAGGAGGAGGACTGGGACTACGCCCCGCGTCCCCAGC	1262
Qy	1261	CCCGATGACAGAAGTTATAAAAGTCAATATTTGAACAATGGCCCTCAGCGGATTGGTAGG	1320
Db	1263	CCCAGTGACAGAAGTTATAAAAGTCTCTACTTGAACAGTGGTCCTCAGCGAATTGGTAGG	1322
Qy	1321	AAGTACAAAAAAGTCCGATTTATGGCATAACAGATGAAACCTTTAAGACGCGTGAAGCT	1380
Db	1323	AAATACAAAAAAGCTCGATTTCGTCGCTTACACGGATGTAACATTTAAGACTCGTAAAGCT	1382
Qy	1381	ATTCAGCATGAATCAGGAATCTTGGGACCTTTACTTTATGGGGAAGTTGGAGACACACTG	1440
Db	1383	ATTCGCTATGAATCAGGAATCCTGGGACCTTTACTTTATGGAGAAGTTGGAGACACACTT	1442
Qy	1441	TTGATTATATTTAAGAATCAAGCAAGCAGACCATATAACATCTACCCTCACGGAATCACT	1500
Db	1443	TTGATTATATTTAAGAATAAAGCGAGCCGACCATATAACATCTACCCTCATGGAATCACT	1502
Qy	1501	GATGTCCGTCCTTTGTATTCAAGGAGATTACCAAAGGTGTAAAACATTTGAAGGATTTT	1560
Db	1503	GATGTCAGCGCTTTGCACCCAGGGAGACTTCTAAAAGGTGGAAACATTTGAAAGACATG	1562
Qy	1561	CCAATTCTGCCAGGAGAAATATTCAAATATAAATGGACAGTGAAGTGTAGAAGATGGGCCA	1620
Db	1563	CCAATTCTGCCAGGAGAGACTTTCAAGTATAAATGGACAGTGAAGTGTGGAAGATGGGCCA	1622
Qy	1621	ACTAAATCAGATCCGCGGTGCCTGACCCGCTATTACTCTAGTTTCGTTAATATGGAGAGA	1680
Db	1623	ACCAAGTCCGATCCTCGGTGCCTGACCCGCTACTACTCGAGCTCCATTAATCTAGAGAAA	1682
Qy	1681	GATCTAGCTTCAGGACTCATTGGCCCTCTCCTCATCTGCTACAAAGAATCTGTAGATCAA	1740
Db	1683	GATCTGGCTTCGGGACTCATTGGCCCTCTCCTCATCTGCTACAAAGAATCTGTAGACCAA	1742
Qy	1741	AGAGGAAACCAGATAATGTCAGACAAGAGGAATGTCATCCTGTTTTCTGTATTTGATGAG	1800
Db	1743	AGAGGAAACCAGATGATGTCAGACAAGAGAAACGTCATCCTGTTTTCTGTATTCGATGAG	1802
Qy	1801	AACCGAAGCTGGTACCTCACAGAGAATATAACAACGCTTTCTCCCCAATCCAGCTGGAGTG	1860
Db	1803	AATCAAAGCTGGTACCTCGCAGAGAATATTACGCGCTTCCTCCCCAATCCGATGGATTA	1862
Qy	1861	CAGCTTGAGGATCCAGAGTTCCAAGCCTCCAACATCATGCACAGCATCAATGGCTATGTT	1920
Db	1863	CAGCCCCAGGATCCAGAGTTCCAAGCTTCTAACATCATGCACAGCATCAATGGCTATGTT	1922

Qy	1921	TTTGATAGTTTGCAGTTGTCAGTTTGTTCATGAGGTGGCATACTGGTACATTCTAAGC	1980
Db	1923	TTTGATAGCTTGCAGCTGTCGGTTTGTTCACGAGGTGGCATACTGGTACATTCTAAGT	1982
Qy	1981	ATTGGAGCACAGACTGACTTCCTTTCTGTCTTCTTCTCTGGATATACCTTCAAACACAAA	2040
Db	1983	GTTGGAGCACAGACGGACTTCCTCTCCGTCTTCTTCTCTGGCTACACCTTCAAACACAAA	2042
Qy	2041	ATGGTCTATGAAGACACACTCACCTATTCCCATTCTCAGGAGAACTGTCTTCATGTCG	2100
Db	2043	ATGGTCTATGAAGACACACTCACCTGTTCCCCTTCTCAGGAGAAACGGTCTTCATGTCA	2102
Qy	2101	ATGGAAAACCCAGGTCTATGGATTCTGGGGTGCCACAACCTCAGACTTTCGGAACAGAGGC	2160
Db	2103	ATGGAAAACCCAGGTCTCTGGGTCTAGGGTGCCACAACCTCAGACTTGCGGAACAGAGGG	2162
Qy	2161	ATGACCGCCTTACTGAAGGTTTCTAGTTGTGACAAGAACTGGTGATTATTACGAGGAC	2220
Db	2163	ATGACAGCCTTACTGAAGGTGTATAGTTGTGACAGGGACATTGGTGATTATTATGACAAC	2222
Qy	2221	AGTTATGAAGATATTTTCTAGTACTTGTCTGAGTAAAAACAATGCCATTGAACCTAGGAGC	2280
Db	2223	ACTTATGAAGATATTCCAGGCTTCTTGTCTGAGTGGAAAGAATGTCATTGAACCCAGA---	2279
Qy	2281	TTTGCCCAGAATTCAAGACCCCTAGTGCGAGCGCTCCAAAGCCTCCGGTCCTGCGACGG	2340
Db	2280	-----	2279
Qy	2341	CATCAGAGGGACATAAGCCTTCTACTTTTCAGCCGGAGGAAGACAAAATGGACTATGAT	2400
Db	2280	-----GACATAAGCCTTCTACTTTTCAGCCGGAGGAAGACAAAATGGACTATGAT	2330
Qy	2401	GATATCTTCTCAACTGAAACGAAGGGAGAAGATTTTGACATTTACGGTGAGGATGAAAAT	2460
Db	2331	GATATCTTCTCAACTGAAACGAAGGGAGAAGATTTTGACATTTACGGTGAGGATGAAAAT	2390
Qy	2461	CAGGACCCTCGCAGCTTTCAGAAGAGAACCCGACACTATTTTATTGCTGCGGTGGAGCAG	2520
Db	2391	CAGGACCCTCGCAGCTTTCAGAAGAGAACCCGACACTATTTTATTGCTGCGGTGGAGCAG	2450
Qy	2521	CTCTGGGATTACGGGATGAGCGAATCCCCCGGGCGCTAAGAAACAGGGCTCAGAACGGA	2580
Db	2451	CTCTGGGATTACGGGATGAGCGAATCCCCCGGGCGCTAAGAAACAGGGCTCAGAACGGA	2510
Qy	2581	GAGGTGCCTCGGTTCAAGAAGGTGGTCTTCCGGGAATTTGCTGACGGCTCCTTCACGCAG	2640
Db	2511	GAGGTGCCTCGGTTCAAGAAGGTGGTCTTCCGGGAATTTGCTGACGGCTCCTTCACGCAG	2570
Qy	2641	CCGTCGTACCGCGGGGAACCTCAACAAACACTTGGGGCTCTTGGGACCCTACATCAGAGCG	2700
Db	2571	CCGTCGTACCGCGGGGAACCTCAACAAACACTTGGGGCTCTTGGGACCCTACATCAGAGCG	2630
Qy	2701	GAAGTTGAAGACAACATCATGGTAACCTTTCAAAAACAGGCGTCTCGTCCCTATTCTTTC	2760
Db	2631	GAAGTTGAAGACAACATCATGGTAACCTTTCAAAAACAGGCGTCTCGTCCCTATTCTTTC	2690
Qy	2761	TACTCGAGCCTTATTTCTTATCCGGATGATCAGGAGCAAGGGGCAGAACCTCGACACAAC	2820

Db	2691	 TACTCGAGCCTTATTTCTTATCCGGATGATCAGGAGCAAGGGGCAGAACCTCGACACAAC	2750
Qy	2821	TTCGTCCAGCCAAATGAAACCAGAACTTACTTTTGAAAAGTGCAGCATCACATGGCACCC	2880
Db	2751	 TTCGTCCAGCCAAATGAAACCAGAACTTACTTTTGAAAAGTGCAGCATCACATGGCACCC	2810
Qy	2881	ACAGAAGACGAGTTTGACTGCAAAGCCTGGGCCTACTTTTCTGATGTTGACCTGGAAAAA	2940
Db	2811	 ACAGAAGACGAGTTTGACTGCAAAGCCTGGGCCTACTTTTCTGATGTTGACCTGGAAAAA	2870
Qy	2941	GATGTGCACTCAGGCTTGATCGGCCCCCTTCTGATCTGCCGCGCCAACACCCTGAACGCT	3000
Db	2871	 GATGTGCACTCAGGCTTGATCGGCCCCCTTCTGATCTGCCGCGCCAACACCCTGAACGCT	2930
Qy	3001	GCTCACGGTAGACAAGTGACCGTGCAAGAATTTGCTCTGTTTTTCACTATTTTTGATGAG	3060
Db	2931	 GCTCACGGTAGACAAGTGACCGTGCAAGAATTTGCTCTGTTTTTCACTATTTTTGATGAG	2990
Qy	3061	ACAAAGAGCTGGTACTTCACTGAAAATGTGGAAAGGAAGTCCGGGGCCCCCTGCCATCTG	3120
Db	2991	 ACAAAGAGCTGGTACTTCACTGAAAATGTGGAAAGGAAGTCCGGGGCCCCCTGCCACCTG	3050
Qy	3121	CAGATGGAGGACCCCACTCTGAAAGAAAACATCGCTTCCATGCAATCAATGGCTATGTG	3180
Db	3051	 CAGATGGAGGACCCCACTCTGAAAGAAAACATCGCTTCCATGCAATCAATGGCTATGTG	3110
Qy	3181	ATGGATACACTCCCTGGCTTAGTAATGGCTCAGAATCAAAGGATCCGATGGTATCTGCTC	3240
Db	3111	 ATGGATACACTCCCTGGCTTAGTAATGGCTCAGAATCAAAGGATCCGATGGTATCTGCTC	3170
Qy	3241	AGCATGGGCAGCAATGAAAATATCCATTTCGATTCATTTTAGCGGACACGTGTTCAGTGTA	3300
Db	3171	 AGCATGGGCAGCAATGAAAATATCCATTTCGATTCATTTTAGCGGACACGTGTTCAGTGTA	3230
Qy	3301	CGGAAAAAGGAGGAGTATAAAATGGCCGTGTACAATCTCTATCCGGGTGTCTTTGAGACA	3360
Db	3231	 CGGAAAAAGGAGGAGTATAAAATGGCCGTGTACAATCTCTATCCGGGTGTCTTTGAGACA	3290
Qy	3361	GTGGAAATGCTACCGTCCAAAGTTGGAATTTGGCGAATAGAATGCCTGATTGGCGAGCAC	3420
Db	3291	 GTGGAAATGCTACCGTCCAAAGTTGGAATTTGGCGAATAGAATGCCTGATTGGCGAGCAC	3350
Qy	3421	CTGCAAGCTGGGATGAGCACGACTTTCCTGGTGTACAGCAAGAAGTGTGAGACTCCCCTG	3480
Db	3351	 CTGCAAGCTGGGATGAGCACGACTTTCCTGGTGTACAGCAAGAAGTGTGAGACTCCCCTG	3410
Qy	3481	GGAATGGCTTCTGGACACATTAGAGATTTTTCAGATTACAGCTTCAGGACAATATGGACAG	3540
Db	3411	 GGAATGGCTTCTGGACGCATTAGAGATTTTTCAGATCACAGCTTCAGGACAGTATGGACAG	3470
Qy	3541	TGGGCCCCAAAGCTGGCCAGACTTCATTATTCCGGATCAATCAATGCCTGGAGCACCAAG	3600
Db	3471	 TGGGCCCCAAAGCTGGCCAGACTTCATTATTCCGGATCAATCAATGCCTGGAGCACCAAG	3530
Qy	3601	GAGCCCTTTTCTTGATCAAGGTGGATCTGTTGGCACCAATGATTATTCACGGCATCAAG	3660

Db 3531 GATCCCCACTCCTGGATCAAGGTGGATCTGTTGGCACCAATGATCATTACGGCATCATG 3590
 Qy 3661 ACCCAGGGTGCCCGTCAGAAGTTCTCCAGCCTCTACATCTCTCAGTTTATCATCATGTAT 3720
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 Db 3591 ACCCAGGGTGCCCGTCAGAAGTTTTCAGCCTCTACATCTCCCAGTTTATCATCATGTAC 3650
 Qy 3721 AGTCTTGATGGGAAGAAGTGGCAGACTTATCGAGGAAATTCCACTGGAACCTTAATGGTC 3780
 ||||| ||| || ||||| || ||||| ||||| || |||||
 Db 3651 AGTCTTGACGGGAGGAAC TGGCAGAGTTACCGAGGGAATTCCACGGGCACCTTAATGGTC 3710
 Qy 3781 TTCTTTGGCAATGTGGATTTCATCTGGGATAAAACACAATATTTTAAACCCTCCAATTATT 3840
 |||||
 Db 3711 TTCTTTGGCAATGTGGACGCATCTGGGATTAAACACAATATTTTAAACCCTCCGATTGTG 3770
 Qy 3841 GCTCGATACATCCGTTTGCACCCAAC TATTATAGCATTTCGAGCACTCTTCGCATGGAG 3900
 |||||
 Db 3771 GCTCGGTACATCCGTTTGCACCCAACACATTACAGCATCCGAGCACTCTTCGCATGGAG 3830
 Qy 3901 TTGATGGGCTGTGATTTAAATAGTTGCAGCATGCCATTGGGAATGGAGAGTAAAGCAATA 3960
 |||||
 Db 3831 TTGATGGGCTGTGATTTAAACAGTTGCAGCATGCCCTGGGAATGCAGAATAAAGCGATA 3890
 Qy 3961 TCAGATGCACAGATTACTGCTTCATCTACTTTACCAATATGTTTGCCACCTGGTCTCCT 4020
 |||||
 Db 3891 TCAGACTCACAGATCACGGCCTCCTCCACCTAAGCAATATATTTGCCACCTGGTCTCCT 3950
 Qy 4021 TCAAAAGCTCGACTTCACCTCCAAGGGAGGAGTAATGCCTGGAGACCTCAGGTGAATAAT 4080
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 Db 3951 TCACAAGCCCGACTTCACCTCCAGGGCGGACGAATGCCTGGCGACCCCGGGTGAGCAGC 4010
 Qy 4081 CCAAAAGAGTGGCTGCAAGTGGACTTCCAGAAGACAATGAAAGTCACAGGAGTAACTACT 4140
 || |
 Db 4011 GCAGAGGAGTGGCTGCAGGTGGACCTGCAGAAGACGGTGAAGGTCACAGGCATCACCACC 4070
 Qy 4141 CAGGGAGTAAATCTCTGCTTACCAGCATGTATGTGAAGGAGTTCCTCATCTCCAGCAGT 4200
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 Db 4071 CAGGGCGTGAAGTCCCTGCTCAGCAGCATGTATGTGAAGGAGTTCCTCGTGTCAGTAGT 4130
 Qy 4201 CAAGATGGCCATCAGTGGACTCTCTTTTTTTCAGAATGGCAAAGTAAAGGTTTTTCAGGGA 4260
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 Db 4131 CAGGACGGCCGCCGCTGGACCCTGTTTCTTCAGGACGGCCACACGAAGGTTTTTCAGGGC 4190
 Qy 4261 AATCAAGACTCCTTCACACCTGTGGTGAAC TCTCTAGACCCACCGTTACTGACTCGCTAC 4320
 |||||
 Db 4191 AATCAGGACTCCTCCACCCCGTGGTGAACGCTCTGGACCCCGCTGTTACGCGCTAC 4250
 Qy 4321 CTTCGAATTACCCCCAGAGTTGGGTGCACCAGATTGCCCTGAGGATGGAGGTTCTGGGC 4380
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 Db 4251 CTGAGGATCCACCCACGAGCTGGGCGCAGCACATCGCCCTGAGGCTCGAGGTTCTAGGA 4310
 Qy 4381 TGCGAGGCACAGGACCTCTAC 4401
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 Db 4311 TGTGAGGCACAGGATCTCTAC 4331